UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, WA 98101

July 7, 2005

Reply to
Attn. of: ETPA-087

Ref: 00-043-DOT

Ms. Patti Sullivan, Project Manager
Federal Aviation Administration
Airports Division – Alaska
222 W. 7th Avenue, #14
Anchorage, Alaska 99513-7504

Dear Ms. Sullivan:

The U.S. Environmental Protection Agency (EPA), Region 10, has reviewed the **Juneau International Airport (JIA) Draft Environmental Impact Statement (DEIS)** (CEQ No. 20050176). These comments are provided in accordance with our responsibilities and authorities under Section 309 of the Clean Air Act (CAA), the National Environmental Policy Act (NEPA), and the Clean Water Act. The DEIS evaluates the environmental impacts associated with a number of proposed actions at the Juneau International Airport to enhance operational safety, facilitate aircraft alignment with Runway 26, and improve airport facilities, including the runway safety area (RSA), snow removal equipment and maintenance facility, secure access to the fuel farm, aircraft parking and storage facilities, and implementation of a new wildlife hazard management plan program.

The proposed actions identified in the DEIS would directly impact over 70 acres of estuarine wetlands. These wetlands are an important component of coastal ecosystems in Southeast Alaska. They provide essential fish spawning and rearing habitat, support wildlife populations, and maintain hydrological functions. Many of these wetlands have high and very high functional ratings according to the DEIS. The proposed actions could also significantly increase storm water runoff volumes, contributing to additional pollutant loading to Duck Creek and Jordan Creek. Both of these creeks are §303(d) listed impaired water bodies with established total maximum daily loads (TMDLs) for specific pollutants.

EPA supports alternatives that are consistent with the Clean Water Act (CWA) in that they represent the least environmentally damaging practicable alternative (LEDPA). The LEDPA should also ensure that existing water quality standards are maintained and that any relevant TMDLs for receiving waters are met. The RSA alternatives, which incorporate full Engineered Material Arresting System (EMAS) technology on both ends of the runway, appear to satisfy these requirements. Although the proposed action for the Wildlife Hazard Management Plan appears to be practicable, it will result in the loss of over 20 acres of estuarine wetlands with high and very high functional ratings. EPA is concerned that preferred alternatives

identified in the DEIS for general aviation expansion (FW/RW-2), navigational lighting (NAV-2B), snow removal equipment and maintenance facility (SREF-3B1), and new access road to fuel farm (FF-1) will have adverse environmental impacts associated with storm water management, pollutant loading to the §303(d) listed streams and wetland functions.

In the DEIS, airport safety is of paramount importance and identified alternatives will likely result in unavoidable environmental impacts. As a consequence, minimization of and compensation for impacts are especially important. While the DEIS does a good job of describing the impacts of the various actions, it is not clear that all possible steps to minimize storm water run off and to comply with the TMDLs on Duck Creek and Jordan Creek have been considered. Further, it is not clear in the DEIS that adequate compensatory mitigation has been developed to offset the unavoidable impacts of all of the actions including the loss of high functioning estuarine wetlands that may occur. Therefore, EPA recommends that minimization and compensatory mitigation be augmented in the Final EIS. To that end, we recommend three additions to the Final EIS: a Storm Water Management Plan, a Duck Creek Restoration Plan, and a Compensatory Mitigation Plan. We also recommend that an interagency compensatory mitigation team be established to develop and manage the final compensatory mitigation plan. These plans will help ensure that the anticipated environmental impacts from upgrading safety measures at the airport will be fully minimized and mitigated.

Based on our review, EPA has assigned an overall rating of "EO-2" (Environmental Objections - Insufficient Information) to the Juneau International Airport DEIS. Please find enclosed written comments that provide additional details and specific recommendations (Enclosure 1), and a copy of the EIS rating system criteria used in conducting our environmental review (Enclosure 2). This rating and a summary of our comments will also be published in the *Federal Register*.

EPA appreciates the opportunity to review and comment on the Juneau International Airport DEIS. EPA recognizes the importance of airport safety and is committed to working closely and collaboratively with Federal Aviation Administration (FAA) and City and Borough of Juneau to address our outstanding concerns and issues regarding this project. We would like to continue working with you to identify a preferred alternative for the RSA, the Wildlife Hazards Management Plan, the Northwest Development Area, and to develop compensatory mitigation options for this project. If you have any questions regarding our comments, please do not hesitate to contact Christine Reichgott, Manager of the NEPA Review Unit at (206) 553-1601.

Sincerely,

/s/

Michelle Pirzadeh, Director
Office of Ecosystems, Tribal and Public Affairs

Enclosures

ENCLOSURE 1

EPA REGION 10 COMMENTS ON THE
JUNEAU INTERNATIONAL AIRPORT
DRAFT ENVIRONMENTAL IMPACT STATEMENT
JULY 7, 2005

I. ENVIRONMENTAL IMPACT OF THE ACTION

■ ACTION ALTERNATIVES FOR THE RUNWAY SAFETY AREA (RSA)

Alternative RSA-1. Construct Traditional Graded Areas Surrounding the Runway. This alternative would require a standard dimensional RSA (1,000 feet long by 500 feet wide) on both ends of the runway. The runway thresholds would remain in the current position. On the west side of the runway, the RSA would encroach into the Mendenhall River, which would require relocating the river 1,000 feet. Approximately 570,191 cubic yards of fill material would be required for construction of 37.2 acres associated with the RSA.

Alternative RSA-1 would have the most significant adverse effect of all action alternatives, including the proposed action. This alternative would affect the hydrology of the Mendenhall River by shifting the river 1,000 feet to the west. Existing channels would be filled and new channels would be excavated. This relocation would change the alignment, while shortening the channel 2,200 feet over an existing 7,500 foot reach (30% decrease). Shortening of the river would cause permanent changes to geomorphologic features by increasing the channel slope and decreasing friction available to the river, contributing to the rivers energy for potential bed and bank erosion. In addition, extension of the runway RSA and relocation of the Mendenhall River would reduce floodplain/tidal prism storage by 96 acre-feet. This alternative would create approximately 37 acres of less pervious surface, increasing storm water volumes by 30% and contributing 15 acre-feet of new runoff to the 100-year storm event. Furthermore, Alternative RSA-1 would directly impact 28.1 acres of estuarine wetlands adjacent to the Mendenhall River and Duck Creek. EPA has environmental objections that this alternative may adversely affect important functions and values of the wetlands that support essential fish habitat (EFH) and that provide mechanisms for nutrient transformation and export. Indirect effects to important wetland functions under this alternative would include: loss of groundwater discharge and lateral flow, increase sediment/toxicant retention, nutrient transformation and export, loss of riparian support, loss of fish and wildlife habitat, and changes to and degradation of regional ecological diversity. These impacts are significant because of the relative rarity of estuarine wetlands in Southeast Alaska and their local and regional importance, particularly to continued maintenance of fish and wildlife populations, and the impairment of hydrological functions sustaining the Refuge. The mitigation proposed in the DEIS appears not to be adequate to compensate for the unavoidable impacts to important aquatic resources.

EPA's review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require consideration of some other project alternative, additional mitigation measures, and/or additional compensatory mitigation. Therefore, on the basis of these environmental impacts, EPA has assigned a rating of "EO" to Alternative RSA-1.

Alternative RSA-5C. Displace Runway 08 Threshold and Construct Additional 26 Runway and Safety Area. The DEIS identifies this alternative as the Proposed Action. Thresholds for Runway 08/26 would be displaced approximately 618 feet to the east. Standard RSA would be installed at each runway end. Approximately 507,375 cubic yards of fill material would create 37.7 acres associated with the RSA.

Alternative RSA-5C would directly affect the greatest area of estuarine wetlands (28.4 acres). Impacts to wetland resources would be considered significant due to the affect on the Refuge, loss of wildlife habitat, and loss of hydrological connectivity to surrounding wetlands associated with filling in the East Runway Slough. This alternative would substantially alter the hydrology needed to sustain the functions and values of the affected wetlands and it would adversely affect the maintenance of natural systems that support wildlife and fish habitat. The extension of the RSA on the east end would alter tidal flow patterns in the East Runway Slough and inhibit fish access and passage between the north and south sides of the RSA fill. A reduction in tidal flows on the south side of the runway and construction of the lateral RSA may lead to an eventual reduction in channel size of the sloughs into which Jordan Creek drains. Alternative RSA-5C would create 38 acres of new impervious and less pervious surface, increasing storm water runoff volumes by 30%, and contributing 15 acre-feet of new runoff to a 100 year storm event. Alternative RSA-5C would have little or no direct effects on the Mendenhall River and wetlands upstream of its mouth as compared to Alternative RSA-1. The nature and extent of wetlands impacts would be greater under Alternative RSA-5C than Alternative RSA-1 in terms of both wetlands acreage and functional units. Adverse environmental impacts associated with Alternative RSA-5C are significant because of the relative rarity of estuarine wetlands in Southeast Alaska and their local and regional importance, particularly to continued maintenance of fish and wildlife populations, and the impairment of hydrological functions sustaining the Refuge. The mitigation proposed in the DEIS appears not to be adequate to compensate for the unavoidable impacts to aquatic resources.

EPA's review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require consideration of other project alternatives, additional mitigation measures, and/or compensatory mitigation. Therefore, on the basis of these environmental impacts, EPA has assigned a rating of "EO" to Alternative RSA-5C.

Alternative RSA-6A. EMAS Technology – EMAS with Declared Distances/Runway 26 Extension. This alternative was designed to avoid direct disturbance to the Refuge east of the runway and minimize disturbance to the Refuge on the west runway end. Runway 08/26 thresholds would be extended 188 feet east of its current location. EMAS would be installed on either end of the runway. This alternative would require 300,108 cubic yards of fill and result in 25.3 acres of new disturbance area.

Alternative RSA-6A would directly affect 16.1 acres of estuarine wetlands, but would have the least direct impact on wetlands and wetland functions of all the action alternatives considered, including the proposed action. Installation of EMAS on both runway ends would create 25 acres of new impervious and less pervious surface, increasing storm water runoff volumes 20% and contributing 10 acre-feet of new runoff to a 100-year flood event. Hydrological changes

associated with this alternative may not affect sustainability of the wetland functions and values, including wildlife and fish habitat. Direct impacts to estuarine wetlands under RSA-6A would be much less severe than under RSA-1 or RSA-5C. According to the DEIS, this alternative would have the least impact of any build alternative on wetlands in the west Airport area.

Our review has identified environmental impacts that should be avoided in order to protect the environment. Corrective measures may require application of additional mitigation measures and compensatory mitigation for unavoidable wetland impacts. Therefore, EPA has assigned a rating of "EC" (Environmental Concerns) to Alternative RSA-6A.

Alternative RSA-6B. EMAS Technology - EMAS with Declared Distances/Runway 08 Extension. The DEIS indicates that this alternative was designed to minimize disturbance to wetlands and habitat east of the Runway. The thresholds for Runway 08/26 would be relocated 188 feet west of its current location. EMAS would be installed on either end of the Runway. This alternative would require 334,841 cubic yards of fill and result in 26.5 acres of new disturbance.

Alternative RSA-6B would directly impact 17.3 acres of estuarine wetlands. According to the DEIS, this alternative is the second least damaging action alternative. Installation of EMAS on both runway ends would create 27 acres of new impervious and less pervious surface, increasing storm water runoff volumes by 21% and contributing 11 acre-feet of new runoff to a 100-year storm event. The impacts on wetlands adjacent to and within the Refuge west of the airport would be minor, and would not affect sustainability of wetland functions and values west of the Runway. Fill at the east runway end would have the least impact on wetlands of the RSA alternatives in terms of area as well as hydrology, habitat, and other functions and values. While low marsh estuarine wetlands along the Mendenhall River would be affected, this alternative would not directly affect the river channel. There would be some adverse impact on wildlife support, and fish habitat functions. This alternative would have the least impact of any build alternative on wetlands in the east and northeast Airport areas.

EPA's review has identified environmental impacts that should be avoided in order to protect the environment. Corrective measures may require application of additional mitigation measures and compensatory mitigation for unavoidable wetland impacts. Therefore, EPA has assigned a rating of "EC" (Environmental Concerns) to Alternative RSA-6B.

Alternative RSA-6C. EMAS Technology – Combined EMAS and Runway Safety Area. This alternative was developed as a means of combining features of both standard RSA and EMAS technology. Runway thresholds would remain at their present location. EMAS system would be installed on the west side and a standard RSA on the east side. This alternative would require 453,969 cubic yards of fill material to create 33.1 acres of new disturbance.

Alternative RSA-6C would directly impact 23.9 acres of estuarine wetlands. Development of the RSA and EMAS would create 33 acres of new impervious and less pervious surface, increasing storm water runoff volumes by 27% and contributing 14 acre-feet of new runoff to a 100-year storm event. There would be a loss of hydrological connectivity caused by filling tidal sloughs on the east side of the runway. These hydrological alterations would affect functions and values of the wetlands, including the natural systems that support EFH and that provide mechanisms for

nutrient transformation and export. The adverse environmental impacts associated with Alternative RSA-6C are significant because of the relative rarity of estuarine wetlands in Southeast Alaska and their local and regional importance, particularly to continued maintenance of fish and wildlife populations, and the changes to and impairment of hydrological functions. The mitigation proposed in the DEIS appears to be inadequate to compensate for the unavoidable impacts to important aquatic resources.

EPA's review has identified environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require consideration of some other project alternative, additional mitigation measures, and/or compensatory mitigation. Therefore, on the basis of these environmental impacts, EPA has assigned a rating of "EO" to Alternative RSA-6C.

RELATIVE RANKING AND RATING OF RSA ACTION ALTERNATIVES

The DEIS does not identify a preferred alternative for the Runway Safety Area. EPA's analysis of the relative environmental impacts of the action alternatives considered in detail focus on the proposed action (Alternative RSA-5C) and whether any of these alternatives would appear to be the least environmentally damaging practicable alternative (LEDPA) on the aquatic ecosystem. Based on the information in the DEIS, all action alternatives appear to be practicable. However, we have provided a relative ranking and rating of the RSA action alternatives that best represent the least environmentally damaging alternative, accordingly:

Relative Ranking	Alternative	EPA Rating
1	RSA-6A. EMAS with Declared Distances – Runway 26 Extension	EC
2	RSA-6B. EMAS with Declared Distances/Runway 08 Extension	EC
3	RSA-6C. Combined EMAS and RSA	EO
4	RSA-5C. Displace Runway 08 Threshold and Construct Additional 26 Runway and Safety Area (Proposed Action)	EO
5	RSA-1. Construct Traditional Graded Areas Surrounding the Runway	EO

Alternatives RSA-6A and RSA-6B would have the least adverse environmental impact as compared to the proposed action (RSA-5C) because the EMAS technology would result in less direct impacts to wetlands, essential fish habitat, and wildlife habitat than construction of the standard RSA. The proposed action would result in greater storm water runoff volumes as compared to Alternatives RSA-6A and RSA-6B. Alternative RSA-6C incorporates both EMAS technology and the standard RSA on each end of the runway. Although the direct impacts to wetlands, essential fish habitat, and wildlife habitat are less than the proposed action, Alternative RSA-6C would result in more adverse impacts than Alternatives RSA-6A and RSA-6C.

■ PROPOSED ACTION FOR THE WILDLIFE HAZARD MANAGEMENT PLAN (WH-1)

The DEIS identifies a proposed action for implementation of the Wildlife Hazard Management Plan program to reduce aircraft collisions with wildlife. This alternative proposes 10 specific actions. FAA requests three additional actions: (1) increase staff and resources for the wildlife hazards management program, (2) eliminate the on-airport water fowl hunting program, and (3)

encourage establishment of a wildlife hazards workgroup. The Wildlife Hazard Management Plan would disturb 233 acres and require 501,500 cubic yards of fill material.

EPA has environmental objections to this proposed action regarding impacts to 13 acres of estuarine wetlands that are hydrologically connected to the Mendenhall River and Duck Creek. This would adversely affect high functions for fish habitat, nutrient transformation and export, wildlife habitat, and regional ecological diversity, which are ecologically expensive to replace. Direct loss of these wetlands would eliminate extensive rearing habitat for juvenile salmonids, as well as resident and marine fish. Eulachon spawning areas in the lower reaches of the river adjacent to the runway would also be removed.

In the Duck Creek drainage, impacts to these estuarine wetlands would contribute to the loss of floodplain storage, changes in tidal channel geomorphology, and increased storm water runoff volumes. Indirect effects to important wetland functions under this alternative would include: loss of groundwater discharge and lateral flow, increased sediment/toxicant retention, nutrient transformation and export, loss of riparian support, loss of fish and wildlife habitat, and degradation of regional ecological diversity. These impacts are significant because of the relative rarity of estuarine wetlands in Southeast Alaska and their local and regional importance, particularly to continued maintenance of fish and wildlife populations, and impairment of hydrological functions. The mitigation proposed in the DEIS appears not to be adequate to compensate for the unavoidable impacts to important aquatic resources.

EPA's review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require changes to the proposed action, consideration of other project alternatives, additional mitigation measures, and/or compensatory mitigation. Therefore, on the basis of these environmental impacts, EPA has assigned a rating of "EO" to Alternative WH-1.

Options for Wildlife Hazard Management

EPA supports FAA's additional actions to increase staff and resources for the wildlife hazards management program, eliminate the on-airport water fowl hunting program, and encourage establishment of a wildlife hazards workgroup. However, in order to avoid and minimize direct impacts to the estuarine wetland areas adjacent to the Mendenhall River and Duck Creek, EPA believes that there are non-structural alternatives to managing wildlife hazards along the west end of the airport. We recommend other options such as increasing hazing in the Refuge at certain times of the year when birds feed on salmon in these wetlands. In addition, we recommend consideration of the installation of exclusion nets, and increasing the frequency and intensity of noise could serve to displace birds from the area in order to avoid impacts to 13 acres of high function and value estuarine wetlands. Furthermore, we recommend an adaptive management approach to managing wildlife hazards for the airport that includes routine monitoring by staff on the effectiveness of these wildlife hazard management actions.

■ **PREFERRED ALTERNATIVE FOR THE FULL DEVELOPMENT OF NORTHEAST AND NORTHWEST DEVELOPMENT AREAS WITH MAJOR DUCK CREEK RELOCATION (FW/RW-2).**

The DEIS identifies Alternative FW/RW-2 as the preferred alternative for aircraft parking and storage facilities to meet existing and future demands. This alternative would develop additional transient/base aircraft parking and tie downs, new hangars for fixed wing aircraft and helicopters, and commercial operations in the Northeast and Northwest Development Areas. This alternative would result in over 42 acres of new disturbance area requiring 200,740 cubic yards of fill material.

EPA's environmental objections to this preferred alternative relate to the major relocation of Duck Creek and impacts of the Northwest Development Area. Relocation of Duck Creek would entail the excavation of 115,100 cubic yards of material to create a new channel and setbacks, which would reduce the length by 500-feet. Shortening the channel would increase the gradient of Duck Creek, which would increase flow velocities and change existing drainage patterns. In addition, Duck Creek is a CWA §303(d) listed impaired water body with established TMDLs for certain pollutants. We advise that any work in Duck Creek should be consistent with TMDLs and should not further degrade water quality.

The Northwest area would require filling over 17 acres covering an area with impervious surface, and contributing to a 7.3 acre-feet increase in runoff for the 100-year storm event. Approximately 2,500 cubic yards of fill would be placed in the floodplain, resulting in a loss of 1.6 acre-feet of flood storage along Duck Creek. Over five acres of high function and value estuarine wetlands would be directly impacted by the development of the Northwest Development Area. Potential effects to important wetland functions and values under this alternative would include: loss of groundwater discharge and lateral flow, increased sediment/toxicant retention, nutrient transformation and export, loss of riparian support, loss of fish and wildlife habitat, and degradation of regional ecological diversity. These impacts are significant because of the relative rarity of estuarine wetlands in Southeast Alaska and their local and regional importance, particularly to continued maintenance of fish and wildlife populations, and impairment of hydrological functions. The mitigation proposed in the DEIS appears to be inadequate to compensate for the unavoidable impacts to important aquatic resources.

EPA's review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require changes to the proposed action, additional mitigation measures, consideration of other project alternatives, and/or compensatory mitigation. Therefore, on the basis of these environmental impacts, EPA has assigned a rating of "EO" to Alternative FW/RW-2.

Mitigation Measures for Duck Creek

The proposed relocation of Duck Creek would reduce its length by 500-ft and create a steeper gradient, which would increase flow velocities and storm water runoff volumes. The Final EIS should identify additional mitigation measures for Duck Creek. These mitigation measures should include expanding the vegetated buffer area on both sides of the creek from 50-ft to 100-ft to support a larger floodplain area. This would provide for additional storm water infiltration and

remediation. Proposed access roads and creek crossings should incorporate full span bridges rather than culverts. In the Final EIS, EPA recommends including a Duck Creek Restoration Plan which incorporates these measures.

- **PREFERRED ALTERNATIVE FOR THE MEDIUM INTENSITY APPROACH LIGHT SYSTEM (MALSR) WITH RUNWAY ALIGNMENT INDICATOR LIGHTS (NAV-2B)**

The DEIS identifies Alternative NAV-2B as the preferred alternative for improving navigational alignment with Runway 26 at night and during poor visibility. This alternative would require installation of 14 light support towers located at 200 feet intervals extending 2,400 feet east of the runway threshold. A 12 feet wide permanent access road using a honeycomb geogrid with 1,000 cubic yards of fill material would be constructed. The exact placement of MALSR towers would directly and indirectly affect wetlands. Approximately 1,000 cubic yards of fill material would directly impact up to 1.5 acres of estuarine wetlands.

Direct impacts would result in the loss of high functions and values for riparian support, fish habitat, wildlife habitat, regional ecological diversity, and ecological replacement costs. The proposed access road may limit tidal flushing, increase tidal flow velocities, and increase erosion or undercutting of the roadbed. The mitigation proposed in the DEIS appears to be inadequate to compensate for the unavoidable impacts to important aquatic resources.

EPA's review has identified environmental impacts that may require additional mitigation measures and compensatory mitigation for unavoidable wetland impacts. Therefore, EPA has assigned a rating of "EC" to Alternative NAV-2B.

- **PREFERRED ALTERNATIVE FOR THE SNOW REMOVAL EQUIPMENT AND MAINTENANCE FACILITY SOUTH OF YANDUKIN DRIVE (SREF-3B1)**

The DEIS identifies Alternative SREF-3B1 as the preferred alternative for a new larger snow removal equipment and maintenance facility. This action would include a 6.7 acre total facility area with a 44,616 square feet building and separate 12,000 square feet building for sand storage on the Northeast Development Area. Approximately 7 acres would be disturbed requiring 40,000 cubic yards of fill material.

This alternative would impact 2.5 acres of estuarine and palustrine wetlands in the Northeast Development Area. Impacts to estuarine and palustrine wetlands would result in the direct loss of the following important functions and values: surface hydrological control, sediment/toxicant retention, regional ecological diversity, ecological replacement costs, riparian support, fish habitat, and wildlife habitat. The storm water runoff volumes would increase during the 100-year flood event by 1.6 acre-feet. The mitigation proposed in the DEIS appears to be inadequate to compensate for the unavoidable impacts to important aquatic resources.

EPA's review has identified environmental impacts that may require including additional mitigation measures and compensatory mitigation for unavoidable wetland impacts. Therefore, EPA has assigned a rating of "EC" to Alternative SREF-3B1.

■ PREFERRED ALTERNATIVE FOR THE DEVELOPMENT OF A NEW ACCESS ROAD TO THE FUEL FARM (FF-1)

The DEIS identifies Alternative FF-1 as the preferred alternative for development of improved, safer and more secure access route to the fuel farm. Alternative FF-1 would include a two-lane, 565 feet long, 24 feet wide road from the fuel farm to airport facilities, and a concrete bottomless arch or box culvert in Duck Creek. This alternative would result in disturbance of 0.23 acres and require 2,000 cubic yards of fill material.

Alternative FF-1 would directly impact 0.4 acres of wetlands associated with the Duck Creek floodplain area. These wetlands are rated high for surface hydrological control and sediment/toxicant retention. Corrective measures may require consideration of additional mitigation measures and compensatory mitigation for unavoidable wetland impacts. Therefore, EPA has assigned a rating of "EC" to Alternative FF-1.

ENVIRONMENTAL IMPACTS TO IMPORTANT AQUATIC RESOURCES

Estuarine and tidal wetlands are an important component of coastal ecosystems in Southeast Alaska, offering among the most productive aquatic habitats, including essential spawning and rearing habitat. Of the different types of estuarine wetlands, low and high estuarine marsh are of the most value to aquatic organisms as they are inundated more frequently and thus more accessible than high marsh habitats (Page 2-231). Low marsh habitats on the site provide spawning and rearing habitat for forage fish, which in turn provide food for anadromous fishes and marine mammals.

The cumulative effects of these proposed actions at the airport have the potential to result in substantial adverse impacts to important aquatic resources of the Mendenhall Wetlands State Game Refuge. In particular, two important aquatic resources in the project area include the Mendenhall River Estuarine Wetlands and the Duck Creek Estuarine Complexes.

Mendenhall River Estuarine Wetlands Complex

This complex represents approximately 20 acres on the west side of the runway. The DEIS (Table 3-33; Page 3-138) identifies the functional ratings for those wetlands to be "very high" for fish habitat, "high" for nutrient transformation and export, wildlife, regional ecological diversity, and ecological replacement cost. These wetlands are also "medium high" for groundwater discharge and lateral flow, sediment/toxicant retention, riparian support, and erosion sensitivity. The Mendenhall River is a glacially fed system, which supports wild populations of coho, pink, chum, and sockeye salmon, cutthroat, steelhead/rainbow trout, and Dolly Varden char. A portion of the banks adjacent to west ends of the runway and taxiway have been diked and armored with riprap. The estuarine wetlands provide substantial rearing habitat for juvenile salmonids as well as resident and marine fish. Eulachon spawn in the lower reaches of the river adjacent to the runway during spring. Direct filling and/or dredging the Mendenhall River Estuarine Wetlands Complex associated with Alternative RSA-1 and Alternative WH-1 would directly eliminate these high function and value wetlands, which are ecologically expensive to replace.

Duck Creek and the Estuarine Wetlands Complex

Duck Creek is considered to be the most physically altered stream in the Juneau Area. The majority of Duck Creek has been directly modified by channel relocation, gravel extraction, encroachment of roads, road crossings, residential development, and commercial development. Duck Creek is water quality limited for dissolved oxygen, residues/debris, metals, fecal coliform, turbidity, and petroleum hydrocarbons. Total maximum daily loads (TMDLs) have been established for each pollutant parameter. Because of this, Duck Creek has been the subject of tremendous public, local, state, and federal habitat restoration efforts that is guiding the implementation of habitat improvements. In the past decade, improvements have included streamside revegetation, wetland creation, and replacement of poorly functioning culverts, cleaning of the sediment. The proposal to relocate Duck Creek and fill the estuarine wetlands associated with the Northwest Development Area and Alternative WH-1 may result in significant degradation of this important aquatic resource.

The Duck Creek and the Estuarine Wetlands Complex include over six acres of wetlands in the proposed Northwest Development Area. The DEIS (Table 3-34) identifies the functional ratings for those wetlands to be "very high" for fish habitat, "high" for surface hydrological control, sediment/toxicant retention, nutrient transformation and export, riparian support, regional ecological diversity, and ecological replacement costs. Within the airport property, Duck Creek has been modified by channel relocation, encroachment of roads and airport facilities, and sedimentation from Airport operations. Although impacted by development, the lowest tidally influenced reach of Duck Creek remains as good quality habitat for rearing juvenile coho salmon, and its low marsh component is good habitat for rearing resident and marine fish when tidally inundated. Upstream of the tidally influenced zone, fish habitat is considered to be of a lower quality due to restricted access caused by low and intermittent flows, since some reaches are seasonally dewatered. Overall, within the Airport property, Duck Creek rates as "high" function fish habitat where tidally influenced, and "moderate-low" function habitat above tidal range.

CONSISTENCY WITH THE CLEAN WATER ACT

§303(d) Impaired Water Bodies

The State of Alaska (Alaska Department of Environmental Conservation) has listed Duck Creek as a Clean Water Act (CWA) §303(d) impaired water body because it failed to meet state water quality standards for dissolved oxygen (DO), residues/debris, metals (iron), fecal coliform, and turbidity. Total Maximum Daily Loads (TMDLs) for all of these pollutant parameters have been established by ADEC and approved by EPA. In addition, Alaska has listed Jordan Creek as water quality impaired for DO, sediment, and residue/debris. EPA has recently approved the residue/debris TMDL for Jordan Creek and is in the process of developing TMDLs for sediment and DO. A TMDL is a tool for implementing water quality standards and is based on the relationship between pollution sources and in-stream water quality conditions. The TMDL establishes loadings or other quantifiable parameters for a water body and thereby provides the basis to establish water quality-based controls. These controls should provide the pollution reduction necessary for a water body to meet water quality standards.

Future actions and/or discharges associated with airport improvements should be consistent with the TMDLs established for Duck Creek and Jordan Creek. ADEC should be consulted regarding future actions that might result in impacts to DO or sediment loading in Jordan Creek, as ADEC

is in the process of developing TMDLs for these pollutant parameters. The EIS should include additional information that would demonstrate how the Wildlife Hazard Management Plan Program, relocation of Duck Creek for the Northwest Development Area, and the access road to the fuel farm would be consistent with the already established TMDLs and Alaska water quality standards. Similarly for Jordan Creek, the EIS should describe how the lateral RSA development, Wildlife Hazard Management Plan (WHMP) and mitigation measures would be consistent with the TMDLs and would not further degrade water quality.

EPA recommends that the Final EIS include a Duck Creek Restoration Plan with the goal of improving water quality. We suggest that the Restoration Plan should include information on construction techniques, best management practices, vegetation planting plans, how invasive species would be controlled, dimensions of the proposed channel, relevant hydrological information, monitoring, corrective measures, and adaptive management.

§402 Storm Water Planning and Management

As indicated in the DEIS (Section 3.6.77; Page 3-95), storm water runoff from the airport drains directly into four different water bodies: Duck Creek, Jordan Creek, the Float Plane Pond, and the Miller-Honsinger Slough/Refuge. Approximately 53% of the airport has been classified as impervious to storm water infiltration and 47% of the land has been identified as pervious. In particular, Duck Creek receives storm water runoff from five Airport drainage basins totaling 94 acres. Fifty-five (55) percent of this area has been identified as impervious and 45% has been identified as pervious. Approximately 4,000 linear feet of vegetated drainage ditches are within the Duck Creek drainage basins. Jordan Creek receives storm water runoff from eight Airport drainage basins totaling 118 acres. Sixty-five (65) percent of this area has been identified as impervious and 35% has been identified as pervious. Approximately 6,600 linear feet of vegetated drainage ditches are present within Jordan Creek drainage basins. A vegetated swale with a storage volume of approximately 20,000 cubic feet also provides storm water detention.

Airport operations have the potential to affect water quality in the adjacent water bodies when de-icing /anti-icing chemicals from aircraft and paved surfaces may mix with storm water. If collection and treatment facilities are not available or used, pollutants could enter receiving streams as runoff through drainage systems. Pollutants can come from storm water management facilities, where treatment capacity might be inadequate; snow and ice management, where contaminated materials might be placed close to receiving water bodies; fuel and/or oil spills, where there might be inadequate attention or delays in remediating problems associated with past spills or leaks; and erosion control during construction, where practices might be improper or inadequate (Section 3.6.7.10; Page 3-102). EPA recommends that the Final EIS describe storm water management facilities, detention/retention areas, active and passive treatment, and drainage systems to address the proposed actions at the Juneau International Airport. The description should identify the location of receiving waters, proposed oil and water separators, catchment basins, aircraft de-icing areas, and proposed snow storage areas. This information should also include plans for storm water management, including containment and treatment of storm water, Best Management Practices, and erosion control measures during project construction. The goal would be to ensure that water quality of Duck Creek, Jordan Creek, and the Mendenhall River meet Alaska state water quality standards.

The proposed Wildlife Hazard Management Plan Alternative would fill in wetlands inside and outside the western airport boundary, convert drainage ditches to underground drains, and eliminate swales along pavement edges. This would create substantial surfaces impervious to infiltration, which would increase storm water flow volumes into adjacent receiving waters. Vegetated drainage ditches can capture, contain, and treat polluted runoff by absorption and biodegradation. The Final EIS should describe how future increases in impervious surface will be managed to maintain water quality in receiving waters, such as Jordan Creek, Duck Creek, and the Mendenhall River. In addition, the Final EIS should describe in detail the dimensions of the new storm water conveyance pipes to handle the increased storm water runoff volumes caused by the new impervious surface over infield areas.

EPA has environmental objections to the proposed filling and/or dredging of approximately 13.5 acres of the Mendenhall River/Duck Creek Estuarine wetlands complex on the west end of the Airport boundary as proposed under the Wildlife Hazard Management Plan Alternative. As an alternative to filling and/or dredging these wetlands, EPA recommends maintaining them as natural biofiltration areas for storm water runoff. The Mendenhall River/Duck Creek estuarine wetlands complex should be maintained as part of the Storm Water Management Plan. We recommend that the Final EIS include an updated Storm Water Management Plan that incorporates the proposed airport actions and addresses increases in impervious surfaces at the Juneau International Airport.

§404(b) (1) Guidelines Compliance

The Guidelines require, in part, that *no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge, which would have less adverse impact on the aquatic ecosystem* [see 40 CFR §230.10(a)]. The LEDPA provision includes two considerations: the first addresses the practicability of alternatives and the second addresses the relative extent of potential adverse environmental impacts associated with the various alternatives under consideration. Since the DEIS appears to recognize that each alternative under consideration is "practicable", (Page 2-1), our review focuses on the relative environmental impact of the proposed actions and the preferred alternatives.

EPA has expressed environmental objections regarding the Proposed Actions for the runway safety area (RSA-5C) and Wildlife Hazards Management Plan (WH-1), and the Preferred Alternative for the Full Aviation Development for the Northwest Area with major Duck Creek relocation (FW/RW-2) because each alternative may not represent the LEDPA. As indicated previously in this letter, Alternatives RSA-6A and RSA-6B would have the least significant environmental impact as compared to the proposed action (RSA-5C) because the proposed EMAS technology would result in less direct impacts to wetlands, essential fish habitat, and wildlife habitat than the standard RSA. Considering the LEDPA, the proposed actions and the preferred alternatives may need additional avoidance, minimization, and compensation measures. Therefore, EPA recommends that the Final EIS include this additional information to support the Guidelines analysis.

CONSISTENCY WITH MENDENHALL WETLANDS STATE GAME REFUGE (MWSGR) MANAGEMENT PLAN

The DEIS (Table 2-13) indicates that Alternative RSA-6A is consistent with the MWSGR Management Plan, while the other RSA action alternatives, including the proposed action (RSA-5C) are inconsistent with it. The Refuge Management Plan (Section 3.2.2.5; Page 3-18) contains land use policies applicable to the JIA and actions being considered in this DEIS. For example, new permanent structures will be allowed within the Refuge only for the purpose of habitat maintenance and enhancement, public use and enjoyment, or essential navigational aids. New temporary structures will be allowed in the Refuge only if there is a significant public need that cannot be met off-Refuge and if they are consistent with Refuge statutes, regulations, goals, and policies. EPA recommends that consistency with the Refuge Management Plan be used as a criterion in selecting the Agency Preferred Alternative for the RSA.

MITIGATION MEASURES

The DEIS identifies methods to reduce and minimize environmental impacts from the RSA end slopes and side slopes, Jordan Creek culvert, East Runway Slough, and MALSR access (Section 2.11; Page 2-214). Mitigation measures should be identified and included for each of the proposed actions. After the preferred alternatives have been identified, we recommend that the Final EIS include specific mitigation measures for RSA, WHMP, Aviation Development, SREF, and FF that would minimize adverse impacts to the important aquatic resources. Mitigation measures for each action should include, but not be limited to, construction timing windows, construction techniques, erosion control planning, implementation of best management practices, erosion control measures, monitoring, and adaptive management.

COMPENSATORY MITIGATION

The DEIS identifies a proposed compensatory mitigation plan (Page 2-230), which includes purchase of the Eagle Beach property to preserve 81 acres of high and low marsh habitat and six (6) acres of inter tidal slough channels. Although the currently proposed compensatory mitigation plan may be viable, there may be problems associated with this proposal. Therefore, EPA recommends that the compensatory mitigation plan include additional mitigation options in order to provide a greater range and more flexibility for the public and agencies to consider. This revised compensatory mitigation plan should be included in the Final EIS. Additional compensatory mitigation options for consideration should include, among others, the following:

Storm Water Management Plan. The proposed actions would significantly increase impervious surfaces by hardening existing pervious areas of the airport. This would greatly increase the volume of storm water runoff into adjacent receiving waters. Duck Creek and Jordan Creek are listed impaired water bodies under the Clean Water Act. Actions taken at the airport should ensure that these receiving waters are not further impaired. Therefore, EPA recommends that a Storm Water Management Plan be developed to manage storm water runoff from the airport to minimize pollutant loading into receiving waters. The Storm Water Management Plan should describe the storm water management facilities, detention/retention areas, active and passive treatment, and drainage systems for the Juneau International Airport. The Plan should identify the location of receiving waters, proposed oil and water separators, catchment basins, aircraft de-

icing/anti-icing areas, location of proposed snow storage areas and management options, plans for storm water management, including containment and treatment of storm water, Best Management Practices, and erosion control measures during project construction

Duck Creek Restoration Plan. This Plan should be developed with the goal of improving water quality. The Restoration Plan should include information on construction techniques, Best Management Practices, vegetation planting plans, how invasive species would be controlled, dimensions of the proposed channel, relevant hydrological information, monitoring, corrective measures, and adaptive management.

Bridge over Duck Creek. We recommend consideration of full span bridges for road access crossing Duck Creek over the use of concrete bottomless arched culverts.

Conservation Easements. Intertidal areas around the refuge are slowly accreting due to hydrostatic rebound. Consideration of compensatory mitigation should include identification of these accreted lands for purchase. These accreted areas could be set aside as conservation easements to expand the current size of the refuge to be managed by organizations such as the Alaska Department of Fish and Game, the Southeast Alaska Land (SEAL) Trust or the Nature Conservancy (TNC).

In-lieu Fees. Another option for compensatory mitigation includes payment of a fee in-lieu of direct on the ground wetlands preservation, creation, or restoration. The fee could be a payment of a fixed amount agreed to by the agencies to compensate for the adverse environmental impacts to the aquatic resources associated with the airport development projects. This fee could be paid to organizations such as SEAL Trust and/or TNC for the acquisition of land to be set aside as a conservation easement.

Interagency State/Federal Compensatory Mitigation Team. EPA recommends that FAA and CBJ engage the Corps of Engineers to initiate an Interagency State and Federal Compensatory Mitigation Review Team that would oversee and monitor the development and implementation of a compensatory mitigation plan for the Juneau International Airport.

Mitigation Ratios. The DEIS establishes for the Eagle Beach mitigation site a mitigation ratio of 1.24 functional units gained for each functional unit lost (Page 2-230). The technical basis and rationale for this mitigation ratio should be discussed in the Final EIS. The development of mitigation ratios for the Juneau International Airport project should be a function of the Interagency State and Federal Compensatory Mitigation Review Team.

ENCLOSURE 2

U.S. Environmental Protection Agency Rating System for
Draft Environmental Impact Statements
Definitions and Follow-Up Action*

Environmental Impact of the Action

LO - - Lack of Objections

The Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC - - Environmental Concerns

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

EO - - Environmental Objections

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU - - Environmentally Unsatisfactory

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1 - - Adequate

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2 - - Insufficient Information

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonaby available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

Category 3 - - Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment. February, 1987.